

WE CLAIM:

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1. A method of capturing and delivering caller identification information to a wireless telephone for calls placed to the wireless telephone during periods in which the wireless telephone is out of service, comprising the steps of:

receiving a call from a calling party directed to the wireless telephone;
obtaining caller identification information on the calling party;
determining whether the wireless telephone is registered to receive calls;
if the wireless telephone is not registered to receive calls, storing the caller identification information; and
if the wireless telephone becomes registered to receive calls, forwarding the stored caller identification information to the wireless telephone.

2. The method of Claim 1, further comprising the step of:
after the step of forwarding the stored caller identification information to the wireless telephone, storing the caller identification information in a missed call log on the wireless telephone.

3. The method of Claim 1, further comprising the step of:
displaying on the wireless telephone an indication of missed calls.

4. The method of Claim 1, further comprising the step of:
displaying the caller identification information on the wireless telephone.

5. The method of Claim 4, wherein the caller identification information includes the name and telephone number of the calling party.

6. The method of Claim 5, wherein the caller identification information further includes the date and time of the call.

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7. The method of Claim 1, wherein the step of determining whether the wireless telephone is registered to receive calls includes the step of transmitting an IS-41 location request from a wireless switch to a home location register.

8. The method of Claim 7, wherein the step of determining whether the wireless telephone is registered to receive calls further comprises the steps of:
determining whether the wireless telephone is powered on; and
determining whether the wireless telephone is located in a wireless service area in which the wireless telephone may receive calls.

9. The method of Claim 1, wherein the step of obtaining caller identification information on the calling party further comprises the step of:
obtaining caller identification information on the calling party from a calling name database.

10. The method of Claim 1, wherein the step of obtaining caller identification information on the calling party further comprises the step of:
obtaining caller identification information on the calling party from a home location register.

11. The method of Claim 1, wherein the step of storing the caller identification information further comprises the steps of:
sending the caller identification information via an IS-41 signal message to a caller identification queue; and
storing the caller identification information in the caller identification queue.

12. The method of Claim 1, wherein after the step of storing the caller identification information, further comprising the step of:

determining whether the wireless telephone is re-registered to receive calls.

13. The method of Claim 1, wherein the step of determining whether the wireless telephone is registered to receive calls, further includes the step of:

querying a home location register for information indicating that the wireless telephone is registered to receive calls.

14. A method of capturing and delivering caller identification information to a wireless telephone for calls placed to the wireless telephone during periods in which the wireless telephone is out of service, comprising the steps of:

receiving at a wireless switch a call from a calling party directed to the wireless telephone;

obtaining caller identification information on the calling party from a calling name database;

querying a home location register for information indicating that the wireless telephone is registered to receive calls;

if the wireless telephone is not registered to receive calls, sending the caller identification information to a caller identification queue for storage;

if the wireless telephone becomes registered to receive calls, forwarding the stored caller identification information to the wireless telephone;

storing the caller identification information in a missed call log on the wireless telephone; and

displaying the caller identification information on the wireless telephone.

15. The method of Claim 14, wherein the step of querying a home location register for information indicating that the wireless telephone is registered to receive calls further comprises the steps of:

determining whether the wireless telephone is powered on; and

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determining whether the wireless telephone is located in a wireless service area in which the wireless telephone may receive calls.

16. The method of Claim 14, wherein prior to the step of forwarding the stored caller identification information to the wireless telephone, further comprising the step of:

determining from the home location register whether the wireless telephone has become registered to receive calls.

17. A system of capturing and delivering caller identification information to a wireless telephone for calls placed to the wireless telephone during periods in which the wireless telephone is out of service, comprising:

a wireless switch operative
to receive a call from a calling party directed to the wireless telephone;

a home location register operative
to obtain caller identification information on the calling party from a calling name database;
to determine whether the wireless telephone is registered to receive calls;
to send the caller identification information to a caller identification queue for storage, if the wireless telephone is not registered to receive calls; and
to forward the stored caller identification information from the caller identification queue to the wireless telephone if the wireless telephone becomes registered to receive calls.

18. The system of Claim 17, wherein the home location register is further operative

to receive an IS-41 location request from a wireless switch for determining whether the wireless telephone is registered to receive calls.

19. The method of Claim 17, further comprising:

the wireless telephone operative

to receive the stored caller identification information;

to store the caller identification information in a missed call log;

to display an indication of missed calls; and

to display the caller identification information.

20. The system of Claim 17, wherein the caller identification information includes the name and telephone number of the calling party.

21. The method of Claim 20, wherein the caller identification information further includes the date and time of the call.

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